

**Earth Observing System
Geoscience Laser Altimeter System**

I-SIPS Software Version Description Document

Version 0

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1 Software Description

The I-SIPS software creates the GLAS standard data products and their required metadata. In order to perform this task the software is composed of the following subsystems:

- Data Preparation and Handling - acquires raw, input data and operator information and schedules tasks, stages data, and archives and distributes the data products.
- GLAS_Exec – performs the data product generation portion of the I-SIPS Software. GLAS_Exec is supported by a group of libraries which are built to perform specific functions, i.e. i/o, science discipline processing, error and message processing.
- Utilities – stand-alone functions which perform tasks such as format the data products in HDF and HDF-EOS, generate the required metadata, create intermediate ancillary products, and perform post-processing quality assurance. The only utilities delivered with V0 are programs to read the standard GLAS data products (product-readers).

2 Functionality of the Version 0 Delivery

The Version 0 (V0) delivery of the I-SIPS Software is intended to prove that the interfaces between the GLAS_Exec and its supporting libraries are functional. Additionally, V0 shows that GLAS_Exec interfaces to inputs correctly, performs specific science processing scenarios, and produces the output products in the internal product formats. The science processing scenarios proved functional for the V0 delivery are:

- Perform end-to-end processing to create GLA01 to GLA15 from GLA00 and ancillary data.
- Perform Elevation Level 1B and Level 2 processing to produce GLA06, 12,13,14,15 from GLA05 and ancillary data.
- Perform Atmosphere Level 1B and Level 2 processing to create GLA07,08,09,10,11 from GLA02 and ancillary data.
- Perform Elevation Level 1B to produce GLA06 using GLA05 and ancillary data.

The only data preparation and handling capability that is available for Version 0 consists of ported software that performs archiving and retrieval of data using the DLT tape media. The ported software consists of legacy code known as Archer received from the Version 0 DAAC. The software and its location are described in the document: “Data Preparation and Handling: Ported GSFC DAAC V0 Software for Version 0 Delivery.” which is contained in Appendix A. The Archer software source code is not included in this delivery since it is in a very preliminary state. The rest of this document is focused particularly on the GLAS_Exec portion of the I-SIPS Software.

The utilities delivered in the Version 0 delivery of the I-SIPS Software are the product-readers. The product-readers read the binary format standard data

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products and create human readable output in the form of three files: integer representation of the product; converted representation of the product into science units; and the scaling factors used to convert from the integer to science unit representation.

3 Assumptions for V0 Delivery

The following assumptions were made when implementing the I-SIPS Software for the V0 delivery:

- There will be a 1-1 temporal correspondence between the Levels 1A, 1B, and 2 product files. This means that the V0 software will not use multiple files of the same product for processing or reprocessing. This capability, however, will be built into the control structures for future use.
- All input data will be time aligned with no missing or bad data.
- Imported ancillary data files will not be available.
- The GLA_ANC_06 file (which will contain the metadata) will not be created using the ESDIS-provided SDP or MTD Toolkits.
- The internal product files produced by GLAS_Exec will be raw data only. No header or metadata describing the file will be produced.
- GLA00 data will be time-aligned and all APIDs merged into a single binary file.

4 Limitations, Waivers, and Known Errors

The following list briefly describes the limitations in the V0 delivery of the I-SIPS Software. The limitations will be removed in future deliveries.

- Limited metadata is produced which describes the processing status / results.
- Quality Assurance of the product files is not performed during the execution of GLAS_Exec.
- Time correction and synchronization of the data is not performed.
- Handling of missing or bad data is not performed.
- External ancillary data was not used.
- The output products are not formatted into HDF/HDF-EOS.
- The GLA03 and GLA04 products are not generated.
- Appendix A, Section 3 lists the limitations of Archer. No other Data Preparation and Handling subsystem functions are delivered.

There are no formal waivers in the V0 delivery.

The list of known errors in the V0 I-SIPS Software are:

- The formats of the GLAS products were frozen at various stages of update. Therefore there is some inconsistency of sizing of arrays and profiles among the Levels 0, 1A, 1B, and 2 products.
- Some conversion algorithms are not specified therefore these will need to be corrected in later deliveries. This results in some values on the products as being undefined. For example the conversion of time from the Level 0 data to the Level 1A data was not defined for V0.
- Appendix A, Section 4 lists known errors of Archer.

5 Inventory of Source Files

Version 0 source files consist of two groups of files. One group is composed of GLAS_Exec (the main program) and its supporting subroutines; the other group consists of the source code in the supporting libraries. The source files are delivered in the tarfile, *glas_exec_v0.tar*. The contents of the tarfile is contained in Appendix B.

5.1 GLAS_Exec and Supporting Subroutines, Version 0a1, 5/10/99

The GLAS_Exec supporting subroutines consist of the sub-Managers, the read and write modules and the wrap-up modules. They are located in the /src/GLAS_Exec directory and are the following:

GLAS_Exec.f90	- The main program
L1Amgr_mod.f90	- Sub-manager for L1A processing
WFMgr_mod.f90	- Sub-manager for waveform processing
AtmMgr_mod.f90	- Sub-manager for Atmosphere processing
ElevMgr_mod.f90	- Sub-manager for elevation processing
OpenFiles_mod.f90	- Opens the input files specified by the control file
ReadAnc_mod.f90	- Reads the ancillary file
Readdata_mod.f90	- Reads the input data
WriteL1A_mod.f90	- Writes products GLA01 – GLA04
WriteWF_mod.f90	- Writes product GLA05
WriteAtm_mod.f90	- Write product GLA06 – GLA11
WriteElev_mod.f90	- Writes products GLA12 – GLA15
CloseFiles_mod.f90	- Closes all files
MainWrap_mod.f90	- Writes summary data and completes processing

A makefile is contained in this directory. It creates the executable for the software, linking in the libraries described below.

5.2 Libraries

Libraries are the key to making GLAS_Exec and related I-SIPS software consistent and maintainable. Each library directory contains a makefile that creates the library. The libraries are in subdirectories under the /src (source) directory and are listed in Appendix B. This section identifies each library and its contents.

5.2.1. libcio.a

Library of generic C routines for reading and writing file data.

cappend.c	- positions file pointer to EOF on opened file.
cclose.c	- closes and open file.
cnlines.c	- counts number of lines in ASCII file.
cfsiz.c	- counts number of bytes in file.
copen.c	- opens a file for specified activity.
cread.c	- reads bytes from a file.
crewind.c	- rewinds an open file.

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cseek.c	- positions file pointer on opened file
cwrite.c	- writes bytes to a file.
vers_cio_mod.f90	- Version information for library

5.2.2. libprod.a, Version 0a1, 5/10/99

Library of F90 routines for reading and/or writing each GLAS standard product file (in the internal format).

GLAxx_prod_mod.f90	- GLAxx PRODUCT structures.
GLAxx_alg_mod.f90	- GLAxx ALGORITHM structures.
GLAxx_mod.f90	- reads and write GLAxx data.
GLAxx_scal_mod.f90	- Initializes GLAxx; contains GLAxx PRODUCT to ALGORITHM conversion and GLAxx ALGORITHM to PRODUCT conversion.
GLAxx_Pass_mod.f90	- Handles GLAxx Pass-Thru's.
vers_io_mod.f90	- Version information for library

Note: There is a file for each product type. GLAxx is replaced with GLA00 – GLA15.

5.2.3. libcntrl.a, Version 0a1, 5/10/99

Library of F90 routines for control file and interface handling.

center{text}_mod.f90	- Centers string on 80 column line.
doubleline_mod.f90	- Prints 80 column double line (=)
exec_flag_mod.f90	- Module which defines exec_flags
finfo_mod.f90	- Module which defines file control structures
getans.f90	- Gets single-key input from user
keyval_mod.f90	- Defines keyword-value data type
multimenu_mod.f90	- Gets user choices from a multiple-option menu
parse_keyval_mod.f90	- Parses keyword-value from a string
singleline_mod.f90	- Prints 80 column single line (-)
strtrim.f90	- Strips spaces from a string.
tolower.f90	- Converts string to lower case
toupper.f90	- Converts string to upper case
writebanner_mod.f90	- Writes informative banner
vers_cntrl_mod.f90	- Version information for library

5.2.4. libfile, Version 0a1, 5/10/99

Library of generic file routines.

OpenFInFile.f90	- Opens a Fortran90 style input file.
OpenFOutFile.f90	- Opens a Fortran90 style output file.
OpenCInFile.f90	- Opens a C style input file.
OpenCOutFile.f90	- Opens a C style output file.
vers_file_mod.f90	- Version information for library

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5.2.5. libanc , Version 0a1, 5/10/99

Library of Ancillary file routines.

ANC07_mod.f90	-	ANC07 file reader.
vers_anc_mod.f90	-	Version information for library

5.2.6. libtime, Version 0a1, 5/10/99

Library of Miscellaneous time conversion routines.

sctime_2i4_to_d_mod.f90	-	time conversion placeholder
sctime_d_to_2i4_mod.f90	-	time conversion placeholder
sctime_i5_to_d_mod.f90	-	time conversion placeholder
sctime_d_to_i5_mod.f90	-	time conversion placeholder
vers_time_mod.f90	-	Version information for library

5.2.7. liberr , Version 0a1, 5/10/99

Error handling routines.

GLASError_mod.f90	-	Error Handling
ANC06_mod.f90	-	ANC06 file writer.
vers_err_mod.f90	-	Version information for library

5.2.8. libplatform.a, Version 0a1, 5/10/99

Library of Platform-specific routines.

kinds_mod.f90	-	Kinds module
types_mod.f90	-	Types module
constants_mod.f90	-	Constants module.
vers_platform_mod.f90	-	Version information for library

5.2.9. libl1a.a

Library of L1A algorithm routines.

L_Alt.f90	-	Calculates altitude products
L_Atmosphere.f90	-	Calculates atmosphere products

5.2.10. libatm.a

Library of Atmosphere algorithm routines.

A_intrp_geoloc_mod.f90	-	Interpolation for POD
A_interp_met_mod.f90	-	Interpolation for MET
A_mbscs_mod.f90	-	Calculates backscatter profiles
A_cal_cofs_mod.f90	-	Calculates calibration coefficients
A_ir_bscs_mod.f90	-	Calculates cross section profiles for 1064
A_g_bscs_mod.f90	-	Calculates cross section profiles for

	532
A_avg_bscs_mod.f90	- Calculates backscatter averages
A_cld_lays_mod.f90	- Calculates cloud layers
A_pbl_lay_mod.f90	- Calculates PBL layer
A_aer_lays_mod.f90	- Calculates elevated aerosol layers
A_aer_opt_prop_mod.f90	- Calculates aerosol optical properties
A_cld_opt_prop_mod.f90	- Calculates cloud optical properties

5.2.11. libelev.a

Library of Elevation algorithm routines.

E_calcLoadTD_mod.f90	- Calculates load tide
E_calcOceanTD_mod.f90	- Calculates ocean tide
E_calcEarthTD_mod.f90	- Calculates earth tide
E_calcPoleTD_mod.f90	- Calculates pole tide
E_getgeoid_mod.f90	- Calculates geoid height
E_calcTrop_mod.f90	- Calculates tropospheric correction
E_calcRange_mod.f90	- Calculates standard instrument range
E_calcRngOff_mod.f90	- Calculate instrument range offsets
C_intrpPod_mod.f90	- Interpolates for POD
C_calcSploc_mod.f90	- Calculates elevation and spot location
E_atmQF_mod.f90	- Calculates atmosphere quality flags
E_calcSlope_mod.f90	- Calculates slope and Roughness
E_calcRefl_mod.f90	- Calculates reflectance
E_chkReg_mod.f90	- Checks the region
E_calcRegParm_mod.f90	- Calculates region parameters

5.2.12. libwf.a

Library of Waveform algorithm routines.

W_Assess_mod.f90	- Assessment of waveforms
W_CalcOtherCh_mod.f90	- Calculates other waveform characteristics
W_DetGeoSurfTyp_mod.f90	- Determines waveform geolocation and surface type

6 Hardware and Operating Environment

HP 9000

HP/UX 10.2

HP Fortran 90 1.0

7 Contents of the I-SIPS Software V0 Delivery Package

The V0 delivery package will be contained on a CD. The contents of the package are:

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1. I-SIPS Software Installation Notes (Appendix C of this document.)
2. I-SIPS Software Version Description Document for Version 0, August 1999
3. GLAS Science Software Requirements Document, Version 2.0, September 1998
4. GLAS I-SIPS Software Architectural Design Document, Version 2.0, October 1998
5. GLAS I-SIPS Software Detailed Design Document, Version 1.0, May 1999
6. I-SIPS Software User's Guide/Operational Procedures, Version 1.0, August 1999
7. GLAS Science Data Management Plan, Version 4.0, July 1999
8. GLAS_Exec Tarfile, glas_exec_v0.tar, 08/18/99
Contents of the tarfile are:
 - Source code
 - Makefile text files
 - Coefficients files
 - Acceptance test data
 - Expected Acceptance Test Results

The full structure of the tarfile is in Appendix B.

9. I-SIPS Software Acceptance and Test Procedures Document, August 1999
10. Acceptance Test Reports, August 1999

Note: There is a discrepancy between the Software Architectural Design Document and the implemented code in that the surface roughness calculation is not done in the waveform processing subsystem it is done in the Levels 1B and 2 Elevation Subsystem.

APPENDIX A

Data Preparation and Handling: Ported GSFC DAAC V0 Software for Version 0 Delivery

A-1. Introduction

The porting of the CBERS DAAC software (Archer) was intended to be initial work in the implementation of the Data Preparation and Handling part of the I-SIPS software. The effort involved the porting of groups of libraries in the /Archer, /daac_common and /ProcessControl directories as configured for the CBERS software. In addition, TCL/TK installation was required to enable the GUI for the software. There were 150 new libraries/processes containing 2000 files that were checked into Clearcase on the HP 9000 (icesat1). ORACLE was also installed to provide the Database for Archer.

The CBERS DAAC software compiles, builds and installs on the HP 9000 machine icesat1 in Clearcase view daacware. The configuration files have been updated, where necessary, to reflect the hardware that exists on icesat1.

Implementation of an instance of the DAAC database (SEAWIFS) was done to validate the porting, and Unit testing was done to archive and stage data. Later, when granules/families of GLAS data have been fully defined, the SEAWIFS tables will be modified to reflect GLAS needs.

A-2. Environment

Oracle 8.0 was installed on icesat1 in directory /O1/app/oracle/8.04. Porting was completed to the HP 9000, running Clearcase. Executables were built in this environment. The 21 processes built were:

1. drive_srvr1
2. drive_srvr2
3. gs_robot_srvr
4. copy_srvr
5. library_mgr
6. archer_mediagr
7. file_srvr
8. arch_srvr
9. schdsrvr
10. executive
11. Rsmamsrvr
12. mediagr
13. promptsrvr
14. logsrvr
15. Spm (simple socket manager)
16. Gdmsgqd (shared memory manager)

Graphical User Interfaces

1. LMD(Library Manager Display)
2. Operator prompt interface
3. Scheduler Control
4. Media User Interface(MUI)
5. Resource Manager Interface

The executables, Korn scripts and TCL/TK files have been build and installed in /home/jeffrey/cbers/bin directory. The configuration files have been installed in /home/jeffrey/cbers/etc directory. The libraries have been built and installed in /home/jeffrey/cbers/lib directory

The 2 main functionalities are: the Process Control that will execute a job script created by the user to stage and archive data and Archer to interact with the ORACLE database, the file server, library manager and the media manager processes to accomplish the staging and archiving tasks.

A-3. Limitations

Limitations of the data preparation and data handling system are:

- Archer runs only in stand-alone mode with a non-GLAS specific database derived from a legacy project (SEAWIFS) and implements the archiving of data to and retrieval from a DLT tape.
- Job scheduling has not been implemented.
- There is no interface with GLAS_Exec.
- There is no facility to process orders or external job requests.
- No facility exists to ingest data and distribute output products.

A-4. Known Errors

The Process Control functionality needs additional work to correct an incorrect behavior found during testing. Message passing failed between two of the processes during test execution. Further diagnosis will be done and corrective action taken for the next (Version 1) delivery. The processes connected with Process Control are schdsrvr, executive, Rsmamsrvr and mediamgr; the GUI processes are Scheduler Control and Media User Interface(MUI)

A-5. Work to be Completed in Future Deliveries

The development required for a fully functional product include the following:

- Designing and implementing a GLAS specific database using a the legacy format provided with the Archer software.
- Integrating the GLAS database with Archer
- Developing scheduler, order processing, ingest and distribution modules.

A-6. Test Results

UNIT TEST PROCEDURE/REPORT BLACK BOX

(Italicized sections are filled in to record the test results. The procedure then becomes the Report)

UNIT NAME: Archer

Tester: IWu

Planned Date Of Test: 04/28/99

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Test 1

Input Files	Output Files	Stubs/Driver	Expected Results	Pass/Fail
(/home/jeffrey/cbers/test_archive) seawifs_test 04, seawifs_test 05, seawifs_test 06	(usr/local/daac/seawifs1a) seawifs_test 04, seawifs_test 05, seawifs_test 06	put_archer.csh	Files sent to archive(DLT tape 21)	Pass

Test Procedure

- Start up the Archer.
- Bring out the GUIs.
- Run the script put_archer.csh.
- Check that the files send to the tape.

Purpose:

Testing the functionality -to archive data files.

Test Environment:

- HP9000
- ClearCase in the daacware view

Test Setup:

- Insert a tape family (seawifs1a) and tape (21) into the database.
- Create a testing directory /home/jeffrey/cbers/test_archive on Unix.
- Create the script put_archer.csh in /home/jeffrey/cbers/bin.

Procedure:

- Start up archer by typing bak_mtg.ksh start servers.
- Bring up the GUIs by typing LMD -t mtg_library_mgr and opi.ksh.
- Archive the files by typing put_archer.csh.
- The Operational Prompt Interface (OPI) gives a prompt to load the tape.
Type OK.
- Watch the LMD GUI information change from loading, to searching, to writing and loaded.

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Check the files are in the tape by first rewinding the tape using command
mt -t /dev/dl3_b rewind

Use the command gtar -tvf /dev/dl3_b repeatedly until the current date and files are observed..

Results (fill in after test):

The files are on the tape.

Test 2

Input Files	Output Files	Stubs/Driver	Expected Results	Pass/Fail
(usr/local/daac/seawifs1a) seawifs_test 04, seawifs_test 05, seawifs_test 06	(/home/jeffrey/cbers/test_stage) seawifs_test 04, seawifs_test 05, seawifs_test 06	get_archer.csh	Retrieve the files from DLT tape 21.	Pass

Test Procedure

Run the script get_archive.csh.

Check that the files are staged

Purpose:

Testing the functionality -to stage files

Test Environment:

HP9000

ClearCase

Test Setup:

Create testing directory /home/jeffrey/cbers/test_stage on Unix.

Create the scripts get_archer.csh in /home/jeffrey/cbers/bin.

Procedure:

First make sure /home/jeffrey/cbers/test_stage is empty by typing rm *.

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Stage the files by typing `get_archer.csh`.

Checking the files are staged by checking the files in
`/home/jeffrey/cbers/test_stage` through the command `ls -l`.

Results (fill in after test):

The files are in `/home/jeffrey/cbers/test_stage`.

APPENDIX B

Tarfile Structure

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0	Aug 16 12:33 1999	bin/
811791	Aug 16 08:30 1999	bin/GLAS_Exec
123064	Aug 16 08:18 1999	bin/gla00_reader
139493	Aug 16 08:18 1999	bin/gla01_reader
135384	Aug 16 08:18 1999	bin/gla02_reader
139484	Aug 16 08:18 1999	bin/gla05_reader
131295	Aug 16 08:18 1999	bin/gla06_reader
94431	Aug 16 08:18 1999	bin/gla07_reader
90335	Aug 16 08:18 1999	bin/gla08_reader
110815	Aug 16 08:18 1999	bin/gla09_reader
98527	Aug 16 08:18 1999	bin/gla10_reader
94431	Aug 16 08:18 1999	bin/gla11_reader
110815	Aug 16 08:18 1999	bin/gla12_reader
127199	Aug 16 08:18 1999	bin/gla13_reader
135395	Aug 16 08:18 1999	bin/gla14_reader
110815	Aug 16 08:18 1999	bin/gla15_reader
811791	Aug 16 12:32 1999	bin/GLAS_Exec_v0
0	Aug 16 07:52 1999	lib/
13008	Aug 16 07:52 1999	lib/libanc.a
10268	Aug 16 07:52 1999	lib/libcio.a
34198	Aug 16 07:52 1999	lib/libcntrl.a
13362	Aug 16 07:52 1999	lib/liberr.a
9088	Aug 16 07:52 1999	lib/libfile.a
4062	Aug 16 07:52 1999	lib/libplatform.a
894560	Aug 16 07:52 1999	lib/libprod.a
6718	Aug 16 07:52 1999	lib/libtime.a
1560	Jul 8 08:59 1999	cc_util/make_defs.incl
903	Jul 8 08:59 1999	cc_util/make_depends.incl
1525	Mar 11 13:05 1999	cc_util/cc_make_final.sh
0	Apr 1 12:19 1999	idl/
409	Jun 14 10:55 1999	data/atm.cntl
411	Jun 14 10:55 1999	data/elev.cntl
777	Jun 14 10:55 1999	data/end-to-end.cntl
355	Jun 14 10:56 1999	data/part_elev.cntl
478228	Jun 14 10:55 1999	data/gla00_data
5190	Jun 14 10:50 1999	data/ANC07_constants.dat
0	Aug 18 14:05 1999	src/
0	Aug 18 14:04 1999	src/modules/
599	Jul 29 14:56 1999	src/modules/Makefile
0	May 15 15:16 1999	src/common_libs/
0	Aug 18 14:04 1999	src/common_libs/platform_lib/
867	Jul 27 16:28 1999	src/common_libs/platform_lib/Makefile
6284	Jul 26 13:10 1999	src/common_libs/platform_lib/kinds_mod.f90
15048	Jul 26 13:10 1999	src/common_libs/platform_lib/types_mod.f90
5630	Jul 26 13:10 1999	src/common_libs/platform_lib/constants_mod.f90
563	Jul 26 13:10 1999	src/common_libs/platform_lib/lbLnk.f90
518	Jul 26 13:10 1999	src/common_libs/platform_lib/vers_platform_mod.f90
867	Jul 27 16:25 1999	src/common_libs/platform_lib/1
0	Aug 18 14:04 1999	src/common_libs/cio_lib/
985	Jul 26 12:58 1999	src/common_libs/cio_lib/cclose.c
1685	Jul 26 12:59 1999	src/common_libs/cio_lib/copen.c
1351	Jul 26 12:59 1999	src/common_libs/cio_lib/cread.c

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1109	Jul 26 12:59 1999	src/common_libs/cio_lib/cseek.c
1209	Jul 26 12:58 1999	src/common_libs/cio_lib/cfsize.c
960	Jul 26 12:59 1999	src/common_libs/cio_lib/crewind.c
1237	Jul 26 12:58 1999	src/common_libs/cio_lib/cappend.c
1181	Jul 26 12:58 1999	src/common_libs/cio_lib/cnlines.c
991	Jul 26 12:59 1999	src/common_libs/cio_lib/cwrite.c
1104	Jul 26 12:58 1999	src/common_libs/cio_lib/check_cread.c
964	Jul 26 12:58 1999	src/common_libs/cio_lib/check_cwrite.c
919	Jul 29 14:56 1999	src/common_libs/cio_lib/Makefile
0	Aug 18 14:04 1999	src/common_libs/cntrl_lib/
1214	Jul 27 16:50 1999	src/common_libs/cntrl_lib/Makefile
1284	Jul 26 13:04 1999	src/common_libs/cntrl_lib/tolower.f90
1234	Jul 26 13:04 1999	src/common_libs/cntrl_lib/toupper.f90
919	Jul 26 13:03 1999	src/common_libs/cntrl_lib/keyval_mod.f90
4048	Jul 26 13:03 1999	src/common_libs/cntrl_lib/multimenu_mod.f90
1077	Jul 26 13:04 1999	src/common_libs/cntrl_lib/read_line_mod.f90
1244	Jul 26 13:04 1999	src/common_libs/cntrl_lib/writebanner_mod.f90
1823	Jul 26 13:03 1999	src/common_libs/cntrl_lib/centertext_mod.f90
1017	Jul 26 13:03 1999	src/common_libs/cntrl_lib/doubleline_mod.f90
953	Jul 26 13:04 1999	src/common_libs/cntrl_lib/singleline_mod.f90
1302	Jul 26 13:04 1999	src/common_libs/cntrl_lib/strtrim.f90
550	Jul 26 13:04 1999	src/common_libs/cntrl_lib/vers_cntrl_mod.f90
2105	Jul 26 13:03 1999	src/common_libs/cntrl_lib/getans.f90
1584	Jul 26 13:03 1999	src/common_libs/cntrl_lib/parse_keyval_mod.f90
8773	Jul 26 13:03 1999	src/common_libs/cntrl_lib/fCtl_mod.f90
8625	Jul 26 13:03 1999	src/common_libs/cntrl_lib/eCtl_mod.f90
1683	Jul 26 12:59 1999	src/common_libs/cntrl_lib/CntlDefs_mod.f90
47	Jul 27 16:55 1999	src/common_libs/cntrl_lib/fixit
0	Aug 18 14:04 1999	src/common_libs/err_lib/
11550	Jul 26 13:04 1999	src/common_libs/err_lib/GLASError_mod.f90
0	Apr 12 15:04 1999	src/common_libs/err_lib/errdef_mod.f90
0	Apr 12 15:10 1999	src/common_libs/err_lib/glaserror.ini
0	Apr 12 15:10 1999	src/common_libs/err_lib/processes.ini
0	Apr 12 15:12 1999	src/common_libs/err_lib/GLASError_vars_mod.f90
0	Apr 12 15:13 1999	src/common_libs/err_lib/main.f90
483	Jul 26 13:06 1999	src/common_libs/err_lib/vers_err_mod.f90
1909	Jul 26 13:04 1999	src/common_libs/err_lib/ANC06_mod.f90
1031	Jul 29 14:56 1999	src/common_libs/err_lib/Makefile
0	Aug 18 14:04 1999	src/common_libs/time_lib/
3354	Jul 26 13:21 1999	src/common_libs/time_lib/sctime_conv_mod.f90
1058	Jul 26 13:21 1999	src/common_libs/time_lib/sctime_2i4_to_d_mod.f90
1054	Jul 26 13:21 1999	src/common_libs/time_lib/sctime_d_to_2i4_mod.f90
1134	Jul 26 13:21 1999	src/common_libs/time_lib/sctime_d_to_i5_mod.f90
1627	Jul 26 13:22 1999	src/common_libs/time_lib/sctime_i5_to_d_mod.f90
1120	Jul 26 13:22 1999	src/common_libs/time_lib/time_d_to_i3_mod.f90
1606	Jul 26 13:22 1999	src/common_libs/time_lib/time_i3_to_d_mod.f90
1011	Jul 29 14:56 1999	src/common_libs/time_lib/Makefile
0	Aug 18 14:04 1999	src/common_libs/anc_lib/
9108	Jul 26 12:55 1999	src/common_libs/anc_lib/ANC07_mod.f90
475	Jul 26 12:55 1999	src/common_libs/anc_lib/vers_anc_mod.f90
1066	Jul 29 14:56 1999	src/common_libs/anc_lib/Makefile
0	Aug 18 14:04 1999	src/common_libs/file_lib/
1223	Jul 26 13:07 1999	src/common_libs/file_lib/OpenCInFile_mod.f90

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1245	Jul 26 13:07 1999	src/common_libs/file_lib/OpenCOutFile_mod.f90
1359	Jul 26 13:07 1999	src/common_libs/file_lib/OpenFInFile_mod.f90
1361	Jul 26 13:07 1999	src/common_libs/file_lib/OpenFOutFile_mod.f90
490	Jul 26 13:07 1999	src/common_libs/file_lib/vers_file_mod.f90
1083	Jul 29 14:56 1999	src/common_libs/file_lib/Makefile
0	Aug 18 14:04 1999	src/common_libs/prod_lib/
19119	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA00_mod.f90
10694	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA01_mod.f90
3717	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA02_mod.f90
8855	Jan 13 15:07 1999	src/common_libs/prod_lib/GLA03_mod.f90
8290	Jan 13 15:07 1999	src/common_libs/prod_lib/GLA04_mod.f90
3638	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA06_mod.f90
4048	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA07_mod.f90
3738	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA08_mod.f90
3741	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA09_mod.f90
4046	Jul 26 13:15 1999	src/common_libs/prod_lib/GLA10_mod.f90
3762	Jul 26 13:15 1999	src/common_libs/prod_lib/GLA11_mod.f90
3750	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA12_mod.f90
3798	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA13_mod.f90
3711	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA14_mod.f90
3753	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA15_mod.f90
3629	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA05_mod.f90
40302	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA00_prod_mod.f90
13544	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA01_alg_mod.f90
21586	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA01_prod_mod.f90
22628	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA01_scal_mod.f90
12809	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA02_alg_mod.f90
23573	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA02_prod_mod.f90
17380	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA02_scal_mod.f90
0	Apr 12 08:05 1999	src/common_libs/prod_lib/GLA03_alg_mod.f90
0	Apr 1 12:21 1999	src/common_libs/prod_lib/GLA03_prod_mod.f90
0	Apr 12 08:01 1999	src/common_libs/prod_lib/GLA03_scal_mod.f90
0	Apr 12 08:05 1999	src/common_libs/prod_lib/GLA04_alg_mod.f90
0	Apr 1 12:21 1999	src/common_libs/prod_lib/GLA04_prod_mod.f90
0	Apr 12 08:01 1999	src/common_libs/prod_lib/GLA04_scal_mod.f90
10847	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA05_alg_mod.f90
17726	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA05_prod_mod.f90
16150	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA05_scal_mod.f90
10670	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA06_alg_mod.f90
19738	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA06_prod_mod.f90
16649	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA06_scal_mod.f90
4910	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA07_alg_mod.f90
5474	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA07_prod_mod.f90
8855	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA07_scal_mod.f90
3864	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA08_alg_mod.f90
7402	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA08_prod_mod.f90
7675	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA08_scal_mod.f90
6225	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA09_alg_mod.f90
12645	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA09_prod_mod.f90
10122	Jul 26 13:15 1999	src/common_libs/prod_lib/GLA09_scal_mod.f90
6487	Jul 26 13:15 1999	src/common_libs/prod_lib/GLA10_alg_mod.f90
11491	Jul 26 13:15 1999	src/common_libs/prod_lib/GLA10_prod_mod.f90
9567	Jul 26 13:15 1999	src/common_libs/prod_lib/GLA10_scal_mod.f90

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5696	Jul 26 13:15 1999	src/common_libs/prod_lib/GLA11_alg_mod.f90
10266	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA11_prod_mod.f90
8979	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA11_scal_mod.f90
7492	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA12_alg_mod.f90
15021	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA12_prod_mod.f90
12468	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA12_scal_mod.f90
9753	Jul 26 13:16 1999	src/common_libs/prod_lib/GLA13_alg_mod.f90
18997	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA13_prod_mod.f90
16120	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA13_scal_mod.f90
10594	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA14_alg_mod.f90
22046	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA14_prod_mod.f90
17106	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA14_scal_mod.f90
6747	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA15_alg_mod.f90
14239	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA15_prod_mod.f90
12315	Jul 26 13:17 1999	src/common_libs/prod_lib/GLA15_scal_mod.f90
0	May 7 09:44 1999	src/common_libs/prod_lib/intarr_to_dp_mod.f90
0	May 7 09:44 1999	src/common_libs/prod_lib/dp_to_intarr_mod.f90
1585	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA01_Pass_mod.f90
2688	Jul 26 13:11 1999	src/common_libs/prod_lib/GLA02_Pass_mod.f90
7743	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA05_Pass_mod.f90
11781	Jul 26 13:12 1999	src/common_libs/prod_lib/GLA06_Pass_mod.f90
4742	Jul 26 13:13 1999	src/common_libs/prod_lib/GLA07_Pass_mod.f90
2539	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA08_Pass_mod.f90
2824	Jul 26 13:14 1999	src/common_libs/prod_lib/GLA09_Pass_mod.f90
490	Jul 26 13:21 1999	src/common_libs/prod_lib/vers_prod_mod.f90
2274	Jul 29 14:56 1999	src/common_libs/prod_lib/Makefile
0	Apr 1 12:24 1999	src/include/
686	Jan 13 15:10 1999	src/include/GLA01.h
692	Jan 13 15:10 1999	src/include/GLA02.h
685	Jan 13 15:10 1999	src/include/GLA03.h
686	Jan 13 15:10 1999	src/include/GLA04.h
685	Jan 13 15:10 1999	src/include/GLA05.h
686	Jan 13 15:10 1999	src/include/GLA06.h
687	Jan 13 15:10 1999	src/include/GLA07.h
684	Jan 13 15:10 1999	src/include/GLA08.h
685	Jan 13 15:10 1999	src/include/GLA09.h
686	Jan 13 15:10 1999	src/include/GLA10.h
684	Jan 13 15:10 1999	src/include/GLA11.h
685	Jan 13 15:10 1999	src/include/GLA12.h
607	Jan 13 15:10 1999	src/include/GLA13.h
686	Jan 13 15:10 1999	src/include/GLA14.h
685	Jan 13 15:10 1999	src/include/GLA15.h
608	Jan 13 15:10 1999	src/include/GLA00.h
0	Aug 18 14:04 1999	src/GLAS_Exec/
3019	Aug 17 08:37 1999	src/GLAS_Exec/Makefile
5682	Jul 26 12:47 1999	src/GLAS_Exec/GLAS_Exec.f90
4287	Jan 20 08:23 1999	src/GLAS_Exec/place_holders.f90
4109	Jul 26 12:52 1999	src/GLAS_Exec/OpenFiles_mod.f90
7818	Jul 26 12:52 1999	src/GLAS_Exec/ReadData_mod.f90
17617	Jul 26 12:47 1999	src/GLAS_Exec/AtmMgr_mod.f90
8847	Jul 26 12:52 1999	src/GLAS_Exec/WFMgr_mod.f90
4304	Jul 26 12:47 1999	src/GLAS_Exec/L1AMgr_mod.f90
3753	Jul 26 12:53 1999	src/GLAS_Exec/WriteAtm_mod.f90

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2615	Jul 26 12:53 1999	src/GLAS_Exec/WriteL1A_mod.f90
1749	Jul 26 12:53 1999	src/GLAS_Exec/WriteWF_mod.f90
2265	Jul 26 12:47 1999	src/GLAS_Exec/MainInit_mod.f90
3018	Jul 26 12:47 1999	src/GLAS_Exec/CloseFiles_mod.f90
3183	Jul 26 12:53 1999	src/GLAS_Exec/WriteElev_mod.f90
2920	Jul 26 12:47 1999	src/GLAS_Exec/MainWrap_mod.f90
14448	Jul 26 12:47 1999	src/GLAS_Exec/ElevMgr_mod.f90
2904	Jul 26 12:52 1999	src/GLAS_Exec/ReadAnc_mod.f90
21787	Jul 26 12:47 1999	src/GLAS_Exec/GetControl_mod.f90
480	Jul 26 12:53 1999	src/GLAS_Exec/vers_exec_mod.f90
0	Aug 18 14:04 1999	src/lib/
610	Jul 29 14:56 1999	src/lib/Makefile
1864	Aug 16 15:14 1999	src/Makefile
0	Aug 18 14:04 1999	src/l1a_lib/
9606	Jul 26 13:22 1999	src/l1a_lib/L_Alt.f90
6226	Jul 26 13:22 1999	src/l1a_lib/L_AtM.f90
3903	Jul 26 13:23 1999	src/l1a_lib/L_Att.f90
0	May 25 15:54 1999	src/l1a_lib/L_Eng.f90
0	May 25 15:54 1999	src/l1a_lib/L_QA_Trnd.f90
1121	Jul 29 15:08 1999	src/l1a_lib/Makefile
0	Jul 29 14:55 1999	src/atmosphere/
0	Jul 26 18:05 1999	src/atmosphere/A_aer_lays/
4527	Jul 26 18:05 1999	src/atmosphere/A_aer_lays/A_aer_lays_mod.f90
0	Jul 26 18:05 1999	src/atmosphere/A_aer_opt_prop/
12812	Jul 26 18:05 1999	src/atmosphere/A_aer_opt_prop/A_aer_opt_prop_mod.f90
0	Jul 26 18:05 1999	src/atmosphere/A_avg_bscs/
3583	Jul 26 18:05 1999	src/atmosphere/A_avg_bscs/A_avg_bscs_mod.f90
0	Jul 26 18:05 1999	src/atmosphere/A_cal_cofs/
5286	Jul 26 18:05 1999	src/atmosphere/A_cal_cofs/A_cal_cofs_mod.f90
0	May 13 16:10 1999	src/atmosphere/A_cal_cofs/A_rebin_lid_mod.f90
0	Jul 26 18:05 1999	src/atmosphere/A_cld_lays/
0	May 13 15:57 1999	src/atmosphere/A_cld_lays/A_cld_det_mod.f90
7145	Jul 26 18:05 1999	src/atmosphere/A_cld_lays/A_cld_lays_mod.f90
0	May 13 15:44 1999	src/atmosphere/A_cld_lays/A_grd_det_mod.f90
0	Jul 26 18:05 1999	src/atmosphere/A_cld_opt_prop/
10146	Jul 26 18:05 1999	src/atmosphere/A_cld_opt_prop/A_cld_opt_prop_mod.f90
0	Jul 26 18:05 1999	src/atmosphere/A_g_bscs/
5229	Jul 26 18:05 1999	src/atmosphere/A_g_bscs/A_g_bscs_mod.f90
0	Jul 26 18:06 1999	src/atmosphere/A_interp_met/
4913	Jul 26 18:06 1999	src/atmosphere/A_interp_met/A_interp_met_mod.f90
0	Jul 26 18:06 1999	src/atmosphere/A_intrp_geoloc/
5141	Jul 26 18:06 1999	src/atmosphere/A_intrp_geoloc/A_intrp_geoloc_mod.f90
0	Jul 26 18:06 1999	src/atmosphere/A_ir_bscs/
4573	Jul 26 18:06 1999	src/atmosphere/A_ir_bscs/A_ir_bscs_mod.f90
0	Jul 26 18:06 1999	src/atmosphere/A_mbscs/
3647	Jul 26 18:06 1999	src/atmosphere/A_mbscs/A_mbscs_mod.f90
0	Jul 26 18:06 1999	src/atmosphere/A_pbl_lay/
4725	Jul 26 18:06 1999	src/atmosphere/A_pbl_lay/A_pbl_lay_mod.f90
0	Apr 22 13:47 1999	src/atmosphere/common/
0	Jul 29 14:55 1999	src/atmosphere/Makefile
0	Jul 29 15:15 1999	src/elevations/
2671	Aug 18 08:24 1999	src/elevations/Makefile
0	Jun 29 15:52 1999	src/elevations/c_bilin_interp_mod.f90

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6019	Jul 26 18:34 1999	src/elevations/c_calcsplc_mod.f90
2729	Jul 26 18:34 1999	src/elevations/c_intrppod_mod.f90
0	May 25 12:30 1999	src/elevations/c_readmet_mod.f90
2790	Jul 26 18:34 1999	src/elevations/e_atmqf_mod.f90
3001	Jul 26 18:34 1999	src/elevations/e_calcearthd_mod.f90
0	May 4 17:54 1999	src/elevations/e_calcisir_mod.f90
0	May 4 17:54 1999	src/elevations/e_calcldir_mod.f90
2988	Jul 26 18:34 1999	src/elevations/e_calcloadtd_mod.f90
2997	Jul 26 18:35 1999	src/elevations/e_calcoceantd_mod.f90
0	May 4 17:54 1999	src/elevations/e_calcocir_mod.f90
2998	Jul 26 18:35 1999	src/elevations/e_calcpoletd_mod.f90
2429	Jul 26 18:35 1999	src/elevations/e_calcrange_mod.f90
2983	Jul 26 18:35 1999	src/elevations/e_calcrefl_mod.f90
2035	Jul 26 18:35 1999	src/elevations/e_calcregparm_mod.f90
0	May 4 17:55 1999	src/elevations/e_calcregnrg_mod.f90
2431	Jul 26 18:35 1999	src/elevations/e_calcrngOff_mod.f90
0	May 4 17:55 1999	src/elevations/e_calcsiir_mod.f90
2909	Jul 26 18:35 1999	src/elevations/e_calcslope_mod.f90
0	May 4 17:55 1999	src/elevations/e_calcstdir_mod.f90
13916	Jul 26 18:35 1999	src/elevations/e_calctrop_mod.f90
3236	Jul 26 18:35 1999	src/elevations/e_chkreg_mod.f90
0	May 4 17:55 1999	src/elevations/e_createl1bqa_mod.f90
0	May 4 17:55 1999	src/elevations/e_createl2qa_mod.f90
4267	Jul 26 18:35 1999	src/elevations/e_getgeoid_mod.f90
0	Jun 28 14:34 1999	src/elevations/e_metconst_mod.f90
0	Jun 28 14:35 1999	src/elevations/e_trop_fns_mod.f90
0	Apr 19 16:40 1999	src/l1a/
0	May 3 12:52 1999	src/waveforms/
0	Jul 26 13:25 1999	src/waveforms/W_Assess/
8572	Jul 26 13:25 1999	src/waveforms/W_Assess/W_Assess_mod.f90
0	May 5 13:13 1999	src/waveforms/W_Assess/test/
0	Jul 26 13:25 1999	src/waveforms/W_CalcOtherCh/
8813	Jul 26 13:25 1999	src/waveforms/W_CalcOtherCh/W_CalcOtherCh_mod.f90
0	Jul 29 14:56 1999	src/waveforms/W_CalcOtherCh/test/
0	Jul 26 13:26 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/
0	Jun 28 13:52 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/test1/
0	Jun 28 16:48 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/test2/
0	Jun 29 10:23 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/test3/
0	Jun 29 10:32 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/test4/
0	Jun 29 10:35 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/test5/
0	Jun 29 10:35 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/test6/
0	Jun 29 11:52 1999	src/waveforms/W_CalcOtherCh/test/testCalc2ndDer/test7/
0	Jul 26 13:26 1999	src/waveforms/W_CalcOtherCh/test/testCalcFnP/
0	Jun 22 18:02 1999	src/waveforms/W_CalcOtherCh/test/testCalcFnP/test1/
0	Jun 22 18:03 1999	src/waveforms/W_CalcOtherCh/test/testCalcFnP/test2/
0	Jun 23 09:26 1999	src/waveforms/W_CalcOtherCh/test/testCalcFnP/test3/
0	Jun 23 09:49 1999	src/waveforms/W_CalcOtherCh/test/testCalcFnP/test4/
0	Jun 23 10:10 1999	src/waveforms/W_CalcOtherCh/test/testCalcFnP/test5/
0	Jun 23 10:10 1999	src/waveforms/W_CalcOtherCh/test/testCalcFnP/test6/
0	Jul 26 13:27 1999	src/waveforms/W_CalcOtherCh/test/testEstimates/
0	Jul 2 14:05 1999	src/waveforms/W_CalcOtherCh/test/testEstimates/test1/
0	Jul 8 08:42 1999	src/waveforms/W_CalcOtherCh/test/testEstimates/test2/
0	Jul 26 13:27 1999	src/waveforms/W_CalcOtherCh/test/testInvertM/

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0	Jun 21 09:13 1999	src/waveforms/W_CalcOtherCh/test/testInvertM/test1/
0	Jun 21 09:16 1999	src/waveforms/W_CalcOtherCh/test/testInvertM/test2/
0	Jul 26 13:27 1999	src/waveforms/W_CalcOtherCh/test/testRankPeaks/
0	Jun 21 09:55 1999	src/waveforms/W_CalcOtherCh/test/testRankPeaks/test1/
0	Jun 21 09:56 1999	src/waveforms/W_CalcOtherCh/test/testRankPeaks/test2/
0	Jun 21 09:56 1999	src/waveforms/W_CalcOtherCh/test/testRankPeaks/test3/
0	Jun 21 09:56 1999	src/waveforms/W_CalcOtherCh/test/testRankPeaks/test4/
0	Jun 21 09:56 1999	src/waveforms/W_CalcOtherCh/test/testRankPeaks/test5/
0	Jun 21 09:56 1999	src/waveforms/W_CalcOtherCh/test/testRankPeaks/test6/
0	May 24 12:48 1999	src/waveforms/W_CalcOtherCh/test/wfOtDriver.f90
0	Jun 14 16:02 1999	src/waveforms/W_CalcOtherCh/test/wfOtTypes_mod.f90
0	Jul 29 14:56 1999	src/waveforms/W_CalcOtherCh/test/Makefile
0	Jul 26 13:28 1999	src/waveforms/W_CreQAStats/
2889	Jul 26 13:28 1999	src/waveforms/W_CreQAStats/W_CreQAStats_mod.f90
0	May 5 13:29 1999	src/waveforms/W_CreQAStats/test/
0	Jul 26 13:28 1999	src/waveforms/W_DetGeoSurTyp/
7351	Jul 26 13:28 1999	src/waveforms/W_DetGeoSurTyp/W_DetGeoSurTyp_mod.f90
0	May 5 13:50 1999	src/waveforms/W_DetGeoSurTyp/test/
0	Jul 26 13:28 1999	src/waveforms/W_Common/
0	Jun 9 13:57 1999	src/waveforms/W_Common/WFconstants_mod.f90
4378	Jul 26 13:28 1999	src/waveforms/W_Common/W_Types_mod.f90
0	Jun 9 13:58 1999	src/waveforms/W_Common/W_ancFileParam_mod.f90
0	Aug 18 14:04 1999	src/atm_lib/
0	Jun 2 15:09 1999	src/atm_lib/A_aer_lays_mod.f90 symbolic link to/atmosphere/A_aer_lays/A_aer_lays_mod.f90
0	Jun 2 15:09 1999	src/atm_lib/A_aer_opt_prop_mod.f90 symbolic link to/atmosphere/A_aer_opt_prop/A_aer_opt_prop_mod.f90
0	Jun 2 15:09 1999	src/atm_lib/A_avg_bscs_mod.f90 symbolic link to/atmosphere/A_avg_bscs/A_avg_bscs_mod.f90
0	Jun 2 15:09 1999	src/atm_lib/A_cal_cofs_mod.f90 symbolic link to/atmosphere/A_cal_cofs/A_cal_cofs_mod.f90
0	Jun 2 15:09 1999	src/atm_lib/A_cld_det_mod.f90 symbolic link to/atmosphere/A_cld_lays/A_cld_det_mod.f90
0	Jun 2 15:09 1999	src/atm_lib/A_cld_lays_mod.f90 symbolic link to/atmosphere/A_cld_lays/A_cld_lays_mod.f90
0	Jun 2 15:10 1999	src/atm_lib/A_cld_opt_prop_mod.f90 symbolic link to/atmosphere/A_cld_opt_prop/A_cld_opt_prop_mod.f90
0	Jun 2 15:10 1999	src/atm_lib/A_g_bscs_mod.f90 symbolic link to/atmosphere/A_g_bscs/A_g_bscs_mod.f90
0	Jun 2 15:09 1999	src/atm_lib/A_grd_det_mod.f90 symbolic link to/atmosphere/A_cld_lays/A_grd_det_mod.f90
0	Jun 2 15:10 1999	src/atm_lib/A_interp_met_mod.f90 symbolic link to/atmosphere/A_interp_met/A_interp_met_mod.f90
0	Jun 2 15:10 1999	src/atm_lib/A_intrp_geoloc_mod.f90 symbolic link to/atmosphere/A_intrp_geoloc/A_intrp_geoloc_mod.f90
0	Jun 2 15:10 1999	src/atm_lib/A_ir_bscs_mod.f90 symbolic link to/atmosphere/A_ir_bscs/A_ir_bscs_mod.f90
0	Jun 2 15:10 1999	src/atm_lib/A_mbscs_mod.f90 symbolic link to/atmosphere/A_mbscs/A_mbscs_mod.f90
0	Jun 2 15:10 1999	src/atm_lib/A_pbl_lay_mod.f90 symbolic link to/atmosphere/A_pbl_lay/A_pbl_lay_mod.f90
0	Jun 2 15:09 1999	src/atm_lib/A_rebin_lid_mod.f90 symbolic link to/atmosphere/A_cal_cofs/A_rebin_lid_mod.f90

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0	Jun 2 15:10 1999	src/atm_lib/test_pdl.f90 symbolic link to/atmosphere/test/test_pdl.f90
1354	Jul 29 16:22 1999	src/atm_lib/Makefile
0	Aug 18 14:04 1999	src/elev_lib/
0	Jun 2 15:08 1999	src/elev_lib/c_calcsplc_mod.f90 symbolic link to/elevations/c_calcsplc_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/c_intrppod_mod.f90 symbolic link to/elevations/c_intrppod_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/c_readmet_mod.f90 symbolic link to/elevations/c_readmet_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_atmqf_mod.f90 symbolic link to/elevations/e_atmqf_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcearthd_mod.f90 symbolic link to/elevations/e_calcearthd_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcisir_mod.f90 symbolic link to/elevations/e_calcisir_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calclmdir_mod.f90 symbolic link to/elevations/e_calclmdir_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcloadtd_mod.f90 symbolic link to/elevations/e_calcloadtd_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcocoantd_mod.f90 symbolic link to/elevations/e_calcocoantd_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcocirc_mod.f90 symbolic link to/elevations/e_calcocirc_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcpoletd_mod.f90 symbolic link to/elevations/e_calcpoletd_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcrange_mod.f90 symbolic link to/elevations/e_calcrange_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcrefl_mod.f90 symbolic link to/elevations/e_calcrefl_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcregparm_mod.f90 symbolic link to/elevations/e_calcregparm_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcregrng_mod.f90 symbolic link to/elevations/e_calcregrng_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcrngOff_mod.f90 symbolic link to/elevations/e_calcrngOff_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcsiir_mod.f90 symbolic link to/elevations/e_calcsiir_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcslope_mod.f90 symbolic link to/elevations/e_calcslope_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calcstdir_mod.f90 symbolic link to/elevations/e_calcstdir_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_calctrop_mod.f90 symbolic link to/elevations/e_calctrop_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_chkreg_mod.f90 symbolic link to/elevations/e_chkreg_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_create1bqa_mod.f90 symbolic link to/elevations/e_create1bqa_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_create12qa_mod.f90 symbolic link to/elevations/e_create12qa_mod.f90
0	Jun 2 15:08 1999	src/elev_lib/e_getgeoid_mod.f90 symbolic link to/elevations/e_getgeoid_mod.f90
1411	Jul 29 15:50 1999	src/elev_lib/Makefile

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0	Jun 3 13:45 1999	src/hdf_lib/
0	Jun 3 13:45 1999	src/metadata_lib/
0	Aug 18 14:04 1999	src/prod_readers/
3692	Aug 17 14:05 1999	src/prod_readers/Makefile
3108	Jul 26 13:23 1999	src/prod_readers/gla00_reader.f90
3560	Jul 26 13:23 1999	src/prod_readers/gla01_reader.f90
3167	Jul 26 13:23 1999	src/prod_readers/gla02_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla05_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla06_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla07_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla08_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla09_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla10_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla11_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla12_reader.f90
3176	Jul 26 13:24 1999	src/prod_readers/gla13_reader.f90
3176	Jul 26 13:25 1999	src/prod_readers/gla14_reader.f90
3176	Jul 26 13:25 1999	src/prod_readers/gla15_reader.f90
127169	Aug 18 14:03 1999	src/prod_readers/gla00_reader
139496	Aug 18 14:03 1999	src/prod_readers/gla01_reader
135388	Aug 18 14:03 1999	src/prod_readers/gla02_reader
139488	Aug 18 14:03 1999	src/prod_readers/gla05_reader
98532	Aug 18 14:03 1999	src/prod_readers/gla07_reader
90340	Aug 18 14:03 1999	src/prod_readers/gla08_reader
110820	Aug 18 14:03 1999	src/prod_readers/gla09_reader
98532	Aug 18 14:03 1999	src/prod_readers/gla10_reader
94436	Aug 18 14:03 1999	src/prod_readers/gla11_reader
135396	Aug 18 14:03 1999	src/prod_readers/gla06_reader
110820	Aug 18 14:03 1999	src/prod_readers/gla12_reader
127204	Aug 18 14:03 1999	src/prod_readers/gla13_reader
139496	Aug 18 14:03 1999	src/prod_readers/gla14_reader
110820	Aug 18 14:03 1999	src/prod_readers/gla15_reader
0	Aug 18 14:04 1999	src/wf_lib/
0	Jun 2 15:28 1999	src/wf_lib/W_Assess_mod.f90 symbolic link to/waveforms/W_Assess/W_Assess_mod.f90
0	Jun 2 15:28 1999	src/wf_lib/W_CalcOtherCh_mod.f90 symbolic link to/waveforms/W_CalcOtherCh/W_CalcOtherCh_mod.f90
0	Jun 2 15:28 1999	src/wf_lib/W_CreQAStats_mod.f90 symbolic link to/waveforms/W_CreQAStats/W_CreQAStats_mod.f90
0	Jun 2 15:28 1999	src/wf_lib/W_DetGeoSurTyp_mod.f90 symbolic link to/waveforms/W_DetGeoSurTyp/W_DetGeoSurTyp_mod.f90
0	Jun 2 15:28 1999	src/wf_lib/W_Types_mod.f90 symbolic link to/waveforms/W_Common/W_Types_mod.f90
1173	Jul 29 16:32 1999	src/wf_lib/Makefile
58	Jul 29 14:45 1999	src/sedscript
1939	Aug 15 11:21 1999	src/gmMakefile
2753	Aug 16 11:35 1999	src/build0
0	Aug 16 11:36 1999	src/tvf.out
0	Aug 18 14:05 1999	src/cmake.state
0	Aug 18 07:45 1999	test/
0	Aug 13 12:15 1999	test/verify/
17781	Aug 13 11:45 1999	test/verify/ANC06_ete.out
265584	Aug 13 11:45 1999	test/verify/GLA01_ete.out

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401632	Aug 13 11:45 1999	test/verify/GLA02_ete.out
137200	Aug 13 11:45 1999	test/verify/GLA05_ete.out
73360	Aug 13 11:45 1999	test/verify/GLA06_elev
73360	Aug 13 11:45 1999	test/verify/GLA06_ete.out
894264	Aug 13 11:45 1999	test/verify/GLA07_atm
894264	Aug 13 11:45 1999	test/verify/GLA07_ete.out
784	Aug 13 11:45 1999	test/verify/GLA08_atm
784	Aug 13 11:45 1999	test/verify/GLA08_ete.out
12448	Aug 13 11:45 1999	test/verify/GLA09_atm
12448	Aug 13 11:45 1999	test/verify/GLA09_ete.out
55136	Aug 13 11:45 1999	test/verify/GLA10_atm
55136	Aug 13 11:45 1999	test/verify/GLA10_ete.out
2304	Aug 13 11:45 1999	test/verify/GLA11_atm
2304	Aug 13 11:45 1999	test/verify/GLA11_ete.out
42168	Aug 13 11:45 1999	test/verify/GLA12_elev
42168	Aug 13 11:45 1999	test/verify/GLA12_ete.out
57176	Aug 13 11:45 1999	test/verify/GLA13_elev
57176	Aug 13 11:45 1999	test/verify/GLA13_ete.out
75880	Aug 13 11:45 1999	test/verify/GLA14_elev
75880	Aug 13 11:45 1999	test/verify/GLA14_ete.out
40544	Aug 13 11:45 1999	test/verify/GLA15_elev
40544	Aug 13 11:45 1999	test/verify/GLA15_ete.out
7292	Aug 13 11:45 1999	test/verify/ANC06_atmp.out
9205	Aug 13 11:45 1999	test/verify/ANC06_elvp.out
3161	Aug 13 11:45 1999	test/verify/ANC06_l1a.out
8517	Aug 13 11:45 1999	test/verify/ANC06_part_elev.out
0	Aug 13 10:39 1999	test/verify/GLA03_ete.out
0	Aug 13 10:39 1999	test/verify/GLA04_ete.out
1237	Aug 13 11:36 1999	test/verify/putall
1069	Aug 13 11:46 1999	test/verify/checkall
1293	Aug 13 11:54 1999	test/verify/putlab
425	Aug 13 12:15 1999	test/verify/datfiles
0	Aug 17 14:24 1999	test/ANC07_constants.dat symbolic link to/data/ANC07_constants.dat
0	Aug 17 14:25 1999	test/gla00_data symbolic link to/data/gla00_data
0	Aug 18 07:45 1999	test/GLAS_Exec_v0 symbolic link to/bin/GLAS_Exec_v0

APPENDIX C

Installation Notes

C-1. GLAS_Exec Installation

The directories in the GLAS_Exec tarfile use relative pathing, so the installation root directory can be placed anywhere in the target filesystem. Copy the received tarfile to the chosen root directory, change to that directory, and extract the contents.

```
tar xf glas_exec_v0.tar
```

This concludes the GLAS_Exec installation process. Reference the GLAS Exec Users Guide for operating instructions.

C-2. Recompiling GLAS_Exec (OPTIONAL !!)

The GLAS_Exec tarfile contains pre-compiled executables and libraries. However, if you wish to recompile the source code, perform the following:

```
cd src  
make all
```

Note that the V0 software is only designed to work in the HP/HPUX 10.2/Fortran 90 1.0 environment.